

# MECHANIC STUDY GUIDE

## Brakes & Braking Systems

### Heavy Duty Trucks

Listed below are a number of items and subjects which make up the mechanic certification tests identified above. An individual's ability to pass the certification test will depend upon the amount of knowledge the person has concerning these items:

#### **Basic Knowledge - 20%**

Inversion valve function  
Anti-skid brakes  
Hydraulic brake line material  
Air brake hand valve  
Brake chatter  
Vacuum booster operation  
Air brake line routing  
Engine (Jacobs) brake  
Air over hydraulic systems

#### **Repair Skills, Air Brakes - 8%**

Finding air leaks  
Adjusting cam actuated brakes  
Brake linkage lubrication  
Air line material

#### **Repair Skills, Hydraulic Brakes - 10%**

Wheel cylinder assembly  
Power booster  
Master cylinder residual valve  
Master cylinder operation

#### **Diagnosis, Air Brakes - 34%**

"S" cam brakes  
Air pressures for fail-safe brakes  
Cause of excessive air pressure  
Dual diaphragm brake chamber operation  
Compressor operation  
Tractor protection valves  
Air brake systems operation  
Inoperative trailer brakes  
Straight truck air line and operation  
Trailer brakes won't release

#### **Diagnosis, Hydraulic Brakes - 14%**

Causes of a pulsating pedal  
Brake booster operation  
Swollen master cylinder diaphragm  
Cause of gear lube inside brake drums  
Brake lining wear diagnosis  
Grabbing brakes

#### **Basic Repair Procedures - 14%**

Spring brake repairs  
Pushrod travel  
Air reservoirs  
Slack adjuster and pushrod angle  
Grease-soaked brake linings

#### **SAMPLE QUESTION:**

Which of the following should a mechanic do before taking apart a spring-type parking brake?

- A. Fill the air reservoir.
- B. Remove the quick release valve.
- C. Remove the diaphragm clamp.
- D. Cage the spring.

#### **ANSWER: D**